



COUNTY OF LOS ANGELES
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November 13, 2007

TO: Each Supervisor

FROM: Jonathan E. Fielding, M.D., M.P.H. *J. Fielding*
Director and Health Officer

SUBJECT: **METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)**

On October 23, 2007, the Board approved a motion by Supervisors Burke and Antonovich which instructed the Chief Executive Officer to work in concert with the Director of Public Health to 1) immediately assess the public health threat posed by Methicillin-Resistant Staphylococcus Aureus (MRSA), and advise the Board on any additional actions or resources that could be helpful in responding to this rising health problem; and 2) report back to the Board in three weeks on the actions taken on this matter. This report is a response to that motion.

BACKGROUND AND THREAT ASSESSMENT

Staphylococcus aureus or "Staph" is a bacteria well known to cause skin infections such as boils, abscesses, and cellulitis. MRSA is Staph bacteria that has developed resistance to methicillin and other penicillin-type antibiotics. MRSA was first identified in the 1960s and is common in hospitals.

Recent reports have referred to MRSA as a "superbug" and some media have confused the two major strains of MRSA, healthcare-associated MRSA (HAMRSA) and community-associated MRSA (CAMRSA), which affect very distinct populations in very different ways. Understanding the differences between these two strains is important when evaluating media coverage and determining the appropriate public health response to this organism.

HAMRSA often causes disease in the blood, bone, joint, or spinal fluid (invasive disease) of older patients with significant exposure to healthcare and medical procedures. It causes approximately 10% of all healthcare-associated infections. It rarely causes invasive disease in people not recently hospitalized, having a medical procedure or receiving specific types of medical care.

Since the mid 1990s, there have been increasing reports of MRSA skin infections in younger populations with little or no recent exposure to the healthcare system; these are community-associated MRSA (CAMRSA) infections. CAMRSA has quickly become one of the most common causes of skin infections in the United States.

MRSA is not a reportable disease in California but trends in Los Angeles County (LAC) are believed to be similar to national trends.

A recent study found that 60% of soft tissue infections in adults in emergency rooms across the nation were caused by CAMRSA. However, unlike HAMRSA, the vast majority of CAMRSA infections remain confined to the skin and soft tissues. Less than 10% of CAMRSA infections are invasive, though severe complications have been reported in some cases. The risk factors for CAMRSA skin infections include crowded living conditions, lack of cleanliness, frequent skin contact, compromised skin integrity, and contaminated surfaces. Most CAMRSA infections can be readily treated with good wound care and sometimes with oral antibiotics.

Despite media attention to deaths in school-age children, individuals ages 5-17 years have the lowest rate of invasive MRSA and individuals over the age of 65 have the highest rate. Furthermore, the rate of MRSA-related death among people under age 17 is extremely low; with the highest fatality rates occurring in people over the age of 65. This is true for both HAMRSA and CAMRSA. Therefore, the threat of youth deaths similar to those publicized is very low.

MRSA of either type is primarily spread by skin-to-skin contact, either on the hands of healthcare workers for HAMRSA infections or direct skin contact for CAMRSA infections. Therefore, handwashing, maintaining good hygiene, keeping wounds covered, and limiting sharing of personal items that touch the skin, all play a significant role in controlling the spread of this organism both in the hospital and in the community.

ACTIONS ALREADY TAKEN TO ADDRESS CAMRSA IN LOS ANGELES COUNTY

Surveillance, Investigation of Outbreaks, and Special Research:

DPH has taken a leading role in the surveillance and control of HAMRSA and CAMRSA. Since 1999, we have investigated 43 outbreaks of MRSA in healthcare facilities and 18 outbreaks of MRSA in the community. The number of annually reported MRSA outbreaks in LAC has varied and displays no discernable pattern. Despite the steady increase since 2000 in cases of CAMRSA skin infections and the recent increase in media coverage of MRSA, there has been no significant increase recently in MRSA outbreaks. Outbreaks have occurred in a variety of settings including jails, athletic teams, daycare facilities and hospitals.

DPH, in conjunction with the LAC Sheriff's Department (LASD), has monitored CAMRSA occurring in County jails since 2002. Approximately 1% of inmates in the jails are diagnosed with a CAMRSA skin infection, but a plurality of the cases is thought to acquire their infections in the community before incarceration.

In 2003, I requested that CAMRSA occurring in hospitalized children in the County be reported to DPH for a special study. We reported to you in 2003 and 2004 that 140 children were hospitalized with CAMRSA during the six-month study period. Only 9% of the cases were invasive disease and no deaths were attributed to this organism during the study.

Development of State Guidelines for HAMRSA:

Prevention and control of healthcare-associated infections (HAI), including MRSA, have become a priority nationally and in LAC. In 2005-2006, DPH participated in the California HAI Advisory Working Group, which submitted a report on the subject to the State Legislature. We currently have representation on the newly appointed California Department of Public Health Advisory Panel on HAI. We also work with the Hospital Association of Southern California (HASC) on infection control issues and jointly sponsored a meeting in September 2007 on the control of Multi Drug Resistant Organisms (MDROs) in hospitals and the community. DPH will also soon issue new guidance for the control of HAMRSA in skilled nursing facilities.

Development of Guidelines, Educational Materials, Trainings, and Publications for CAMRSA:

DPH has taken the lead in several educational aspects of CAMRSA. Since the first Los Angeles CAMRSA outbreaks in 2002, we have been at the forefront of developing and disseminating educational materials and guidelines for healthcare providers and consumers in English and Spanish. Our work can be seen on our MRSA website at <http://lapublichealth.org/acd/MRSA.htm>. We have presented this information directly to healthcare providers, as well as in articles in *The Public's Health*, *Southern California Physician*, and the California Medical Board newsletter. In 2004, we distributed our Staph prevention guidelines to homeless shelters, schools, and gyms. We have also consulted with, or presented information to, the Los Angeles Police Department, City of Los Angeles Fire Department, Los Angeles County Office of Education (LACOE), Los Angeles Unified School District, Los Angeles County Department of Children and Family Services, the Sheriff's Department, and other governmental and community organizations with particular emphasis on those that serve the homeless, such as the Emergency Network Los Angeles, Skid Row organizations, and free clinic healthcare providers.

DPH staff collaborates closely with LASD in developing control measures for MRSA at the jails. For more than 5 years, DPH has worked with LASD to count cases; develop and refine treatment options; create and disseminate educational information for detainees, inmates and staff; and establish and ensure application of other hygiene and environmental control policies. We are consulted frequently by LASD regarding MRSA and other communicable diseases. Our recommendations regarding the control of MRSA in the jails, which were first issued in 2002, have not substantially changed. However, we recognize that the jails have challenges to implementing all the recommendations and must determine what is practical and possible.

Promoting Appropriate Antibiotic Use:

From 2000-2005, the Centers for Disease Control and Prevention (CDC) funded a Senior Health Educator at DPH to address the issue of drug-resistance. Inappropriate use of antibiotic medications may result in drug-resistant infection strains. In response, we developed education programs for community members and healthcare professionals, including a dedicated website <http://lapublichealth.org/acd/AntiBio.htm> and a regular column in *The Public's Health*; analyzed data about the use of antibiotics by LAC residents; and published the findings on our website and in the *Southern California Physician*.

ACTIONS WE WILL TAKE TO ADDRESS CAMRSA

We will continue to distribute our existing guidelines and health education materials to community organizations, including schools, daycare centers, gyms, and other recreation centers. We are refining and updating our CAMRSA guidelines for employers and community facilities, such as schools, day care centers, and other non-healthcare facilities. We are developing further specific MRSA guidelines for schools to assist school nurses, principals, and superintendents in the control and prevention of this organism. We have been working closely with our colleagues at LAUSD regarding the appropriate response to cases of MRSA and we will offer to work with all other public schools in the County, through LACOE, as well as with all private schools.

The State is currently considering several different options to determine the burden of MRSA in California. This may include making MRSA infections reportable or sponsoring targeted studies to better ascertain risk factors for the disease. We are participating in discussions with the State concerning the best way to track MRSA and considering options specific to Los Angeles County.

We will continue to work with the Sheriff's Department in its efforts to control MRSA in the jails.

ADDITIONAL RESOURCES TO ADDRESS MRSA AND OTHER RESISTANT ORGANISMS

MRSA is a significant and growing public health problem, as are other antibiotic resistant organisms including salmonella, *E. coli*, pneumococcal disease, gonorrhea, Acinetobacter, and HIV. Minimizing the number of infections is an emerging challenge which deserves a high priority. Therefore we are requesting two new positions to address MRSA and other significant drug-resistant infections. These additions will allow us to provide increased critical surveillance and consultation services. These two positions include:

- an additional epidemiologist to perform surveillance for antibiotic resistant organisms, including MRSA, in the community and in hospitals. The epidemiologist would assist in developing specific guidelines and education regarding the control of drug-resistant infections in the community;
- a public health nurse position to collect, categorize, track and document consultation calls from physicians, clinics, hospitals, skilled nursing facilities and other health care agencies on healthcare-associated infections, including MRSA, to establish the impact and long-term effects of these infections in LAC healthcare facilities.

With these additional resources DPH could expand its efforts to understand and respond to MRSA and other significant infections, in the community and healthcare settings.

This additional unmet need will be reviewed with the CEO, along with other priority program requests, as part of the FY 08-09 DPH budget preparation process. DPH will also work with the CEO to determine if potential resources to support these requests can be identified prior to FY 08-09.

If you have any questions or need additional information, please let me know.

JEF:eb
PH:710:007

c: Chief Executive Officer
County Counsel
Executive Officer, Board of Supervisors